

Figure 2

[illegible]

102

٢١٠

FIGURE 3

216

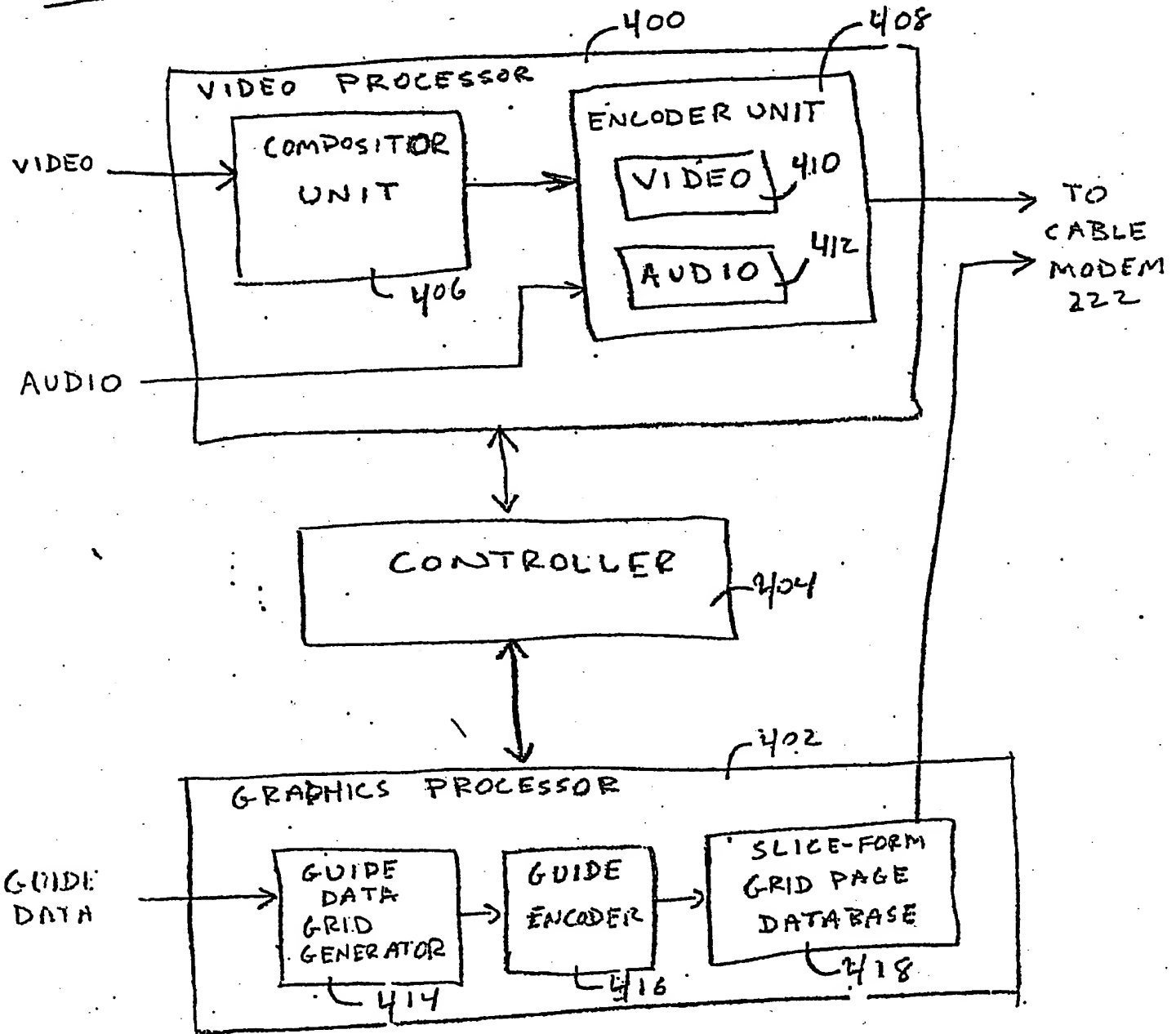


FIGURE 4

228

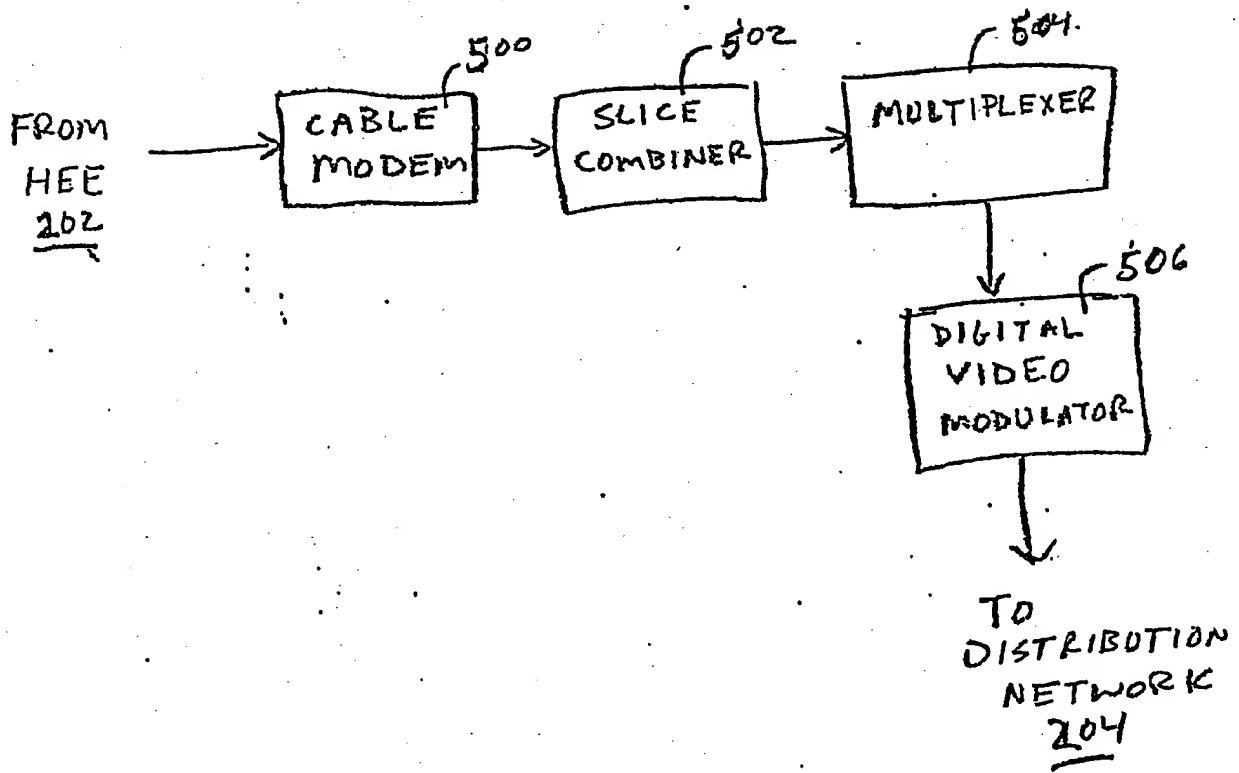


FIGURE 5

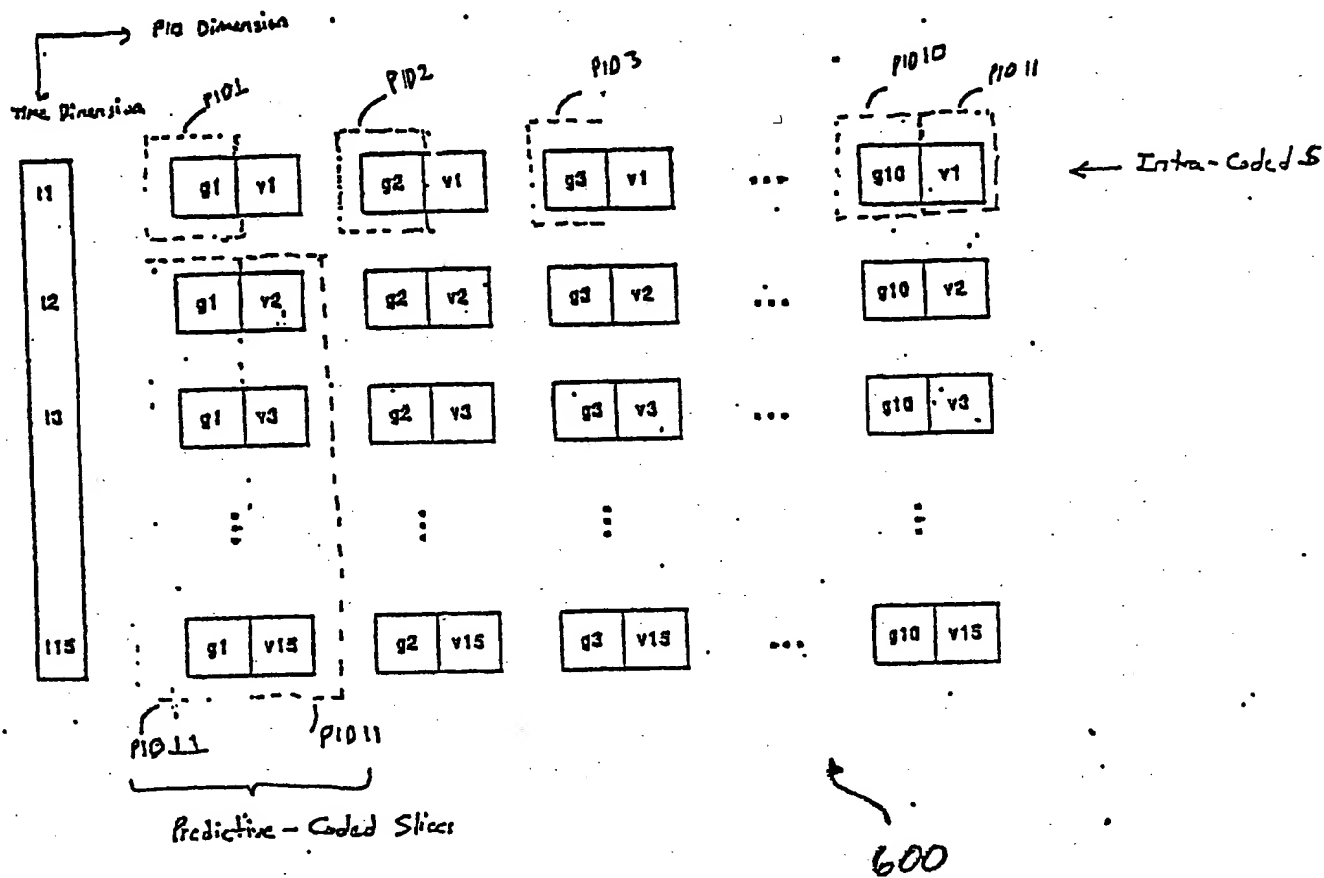


Figure 8

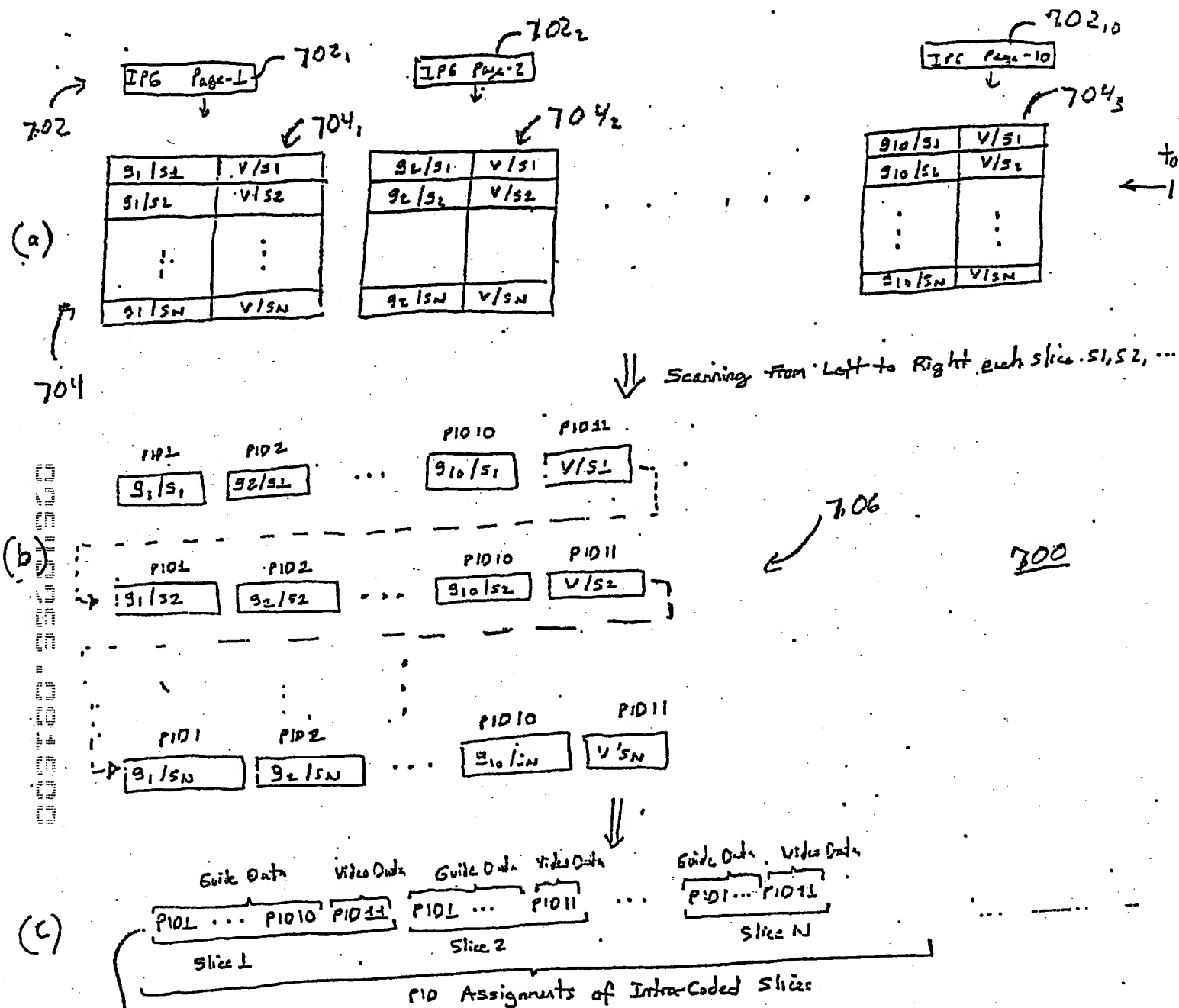
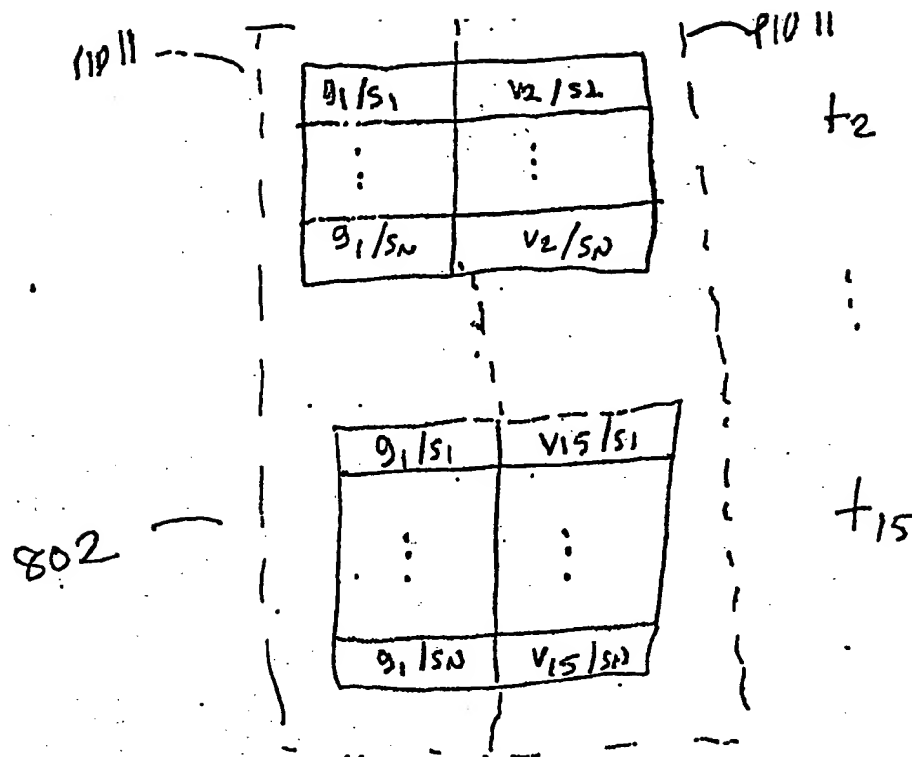
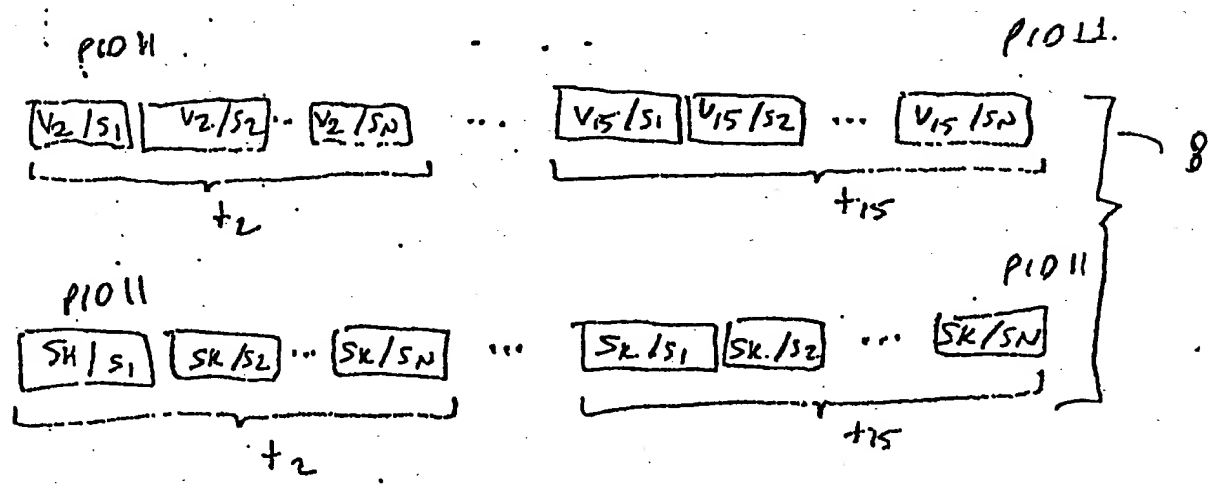


Figure 7



Scanning Video Slices
From left to right
top to bottom



Skipped
Guide
Slices

800

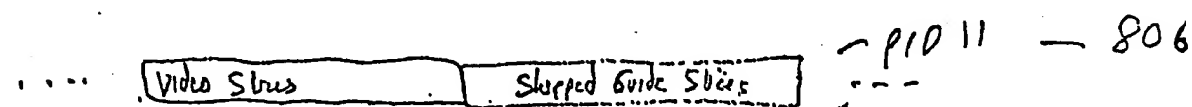
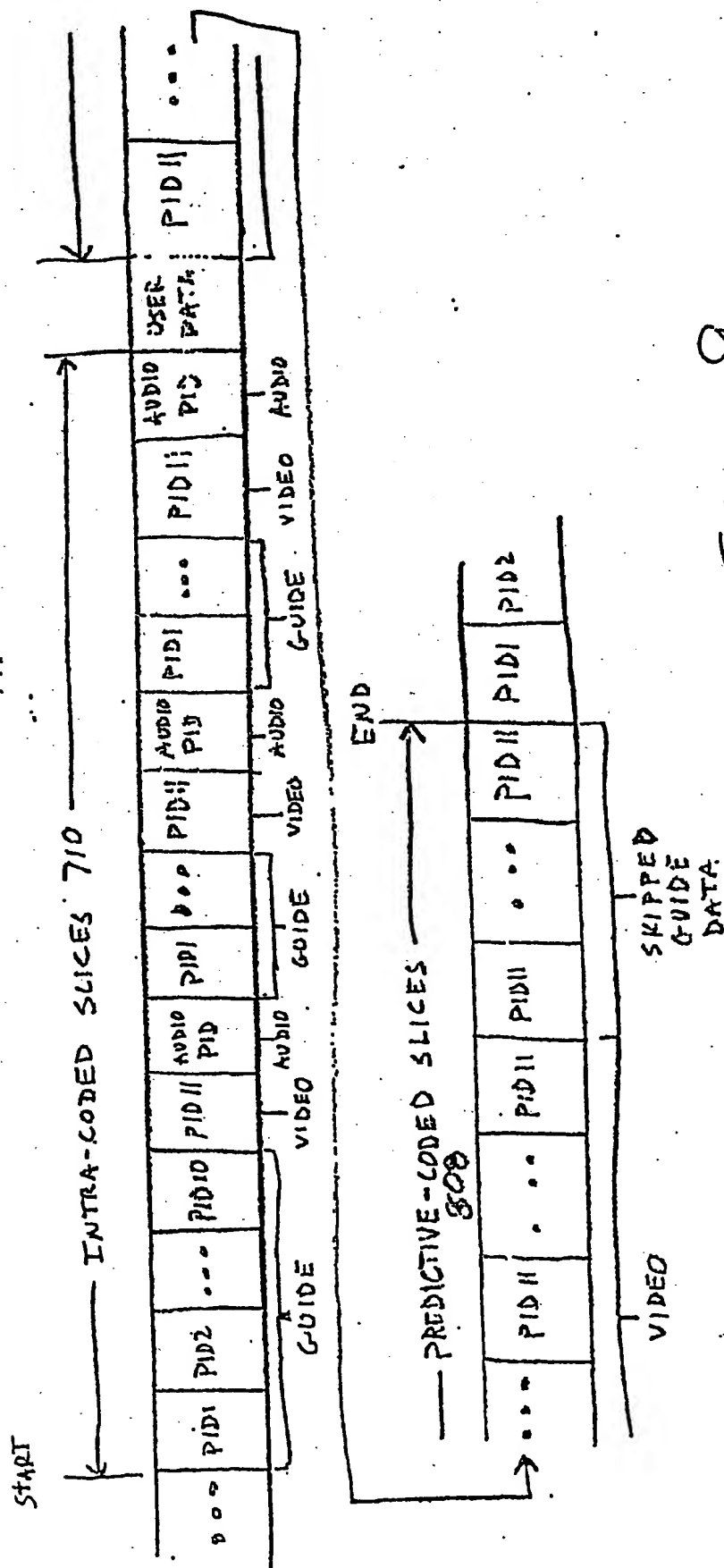
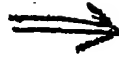


Figure 8

Figure 9



g_1/s_1	v_2/s_1
g_1/s_N	v_2/s_N



g_k/s_1	v_2/s_1	g_k/s_2	v_2/s_2	...	g_k/s_N	v_2/s_N
-----------	-----------	-----------	-----------	-----	-----------	-----------

--	--	--	--	--	--	--

--	--	--	--	--	--	--

g_k/s_1	v_1/s_1	g_k/s_2	v_1/s_2	...	g_k/s_N	v_1/s_N
-----------	-----------	-----------	-----------	-----	-----------	-----------



g_k/s_1	v_2/s_1	g_k/s_2	v_2/s_2	...	g_k/s_N	v_1/s_N
-----------	-----------	-----------	-----------	-----	-----------	-----------

1000

Figure 10

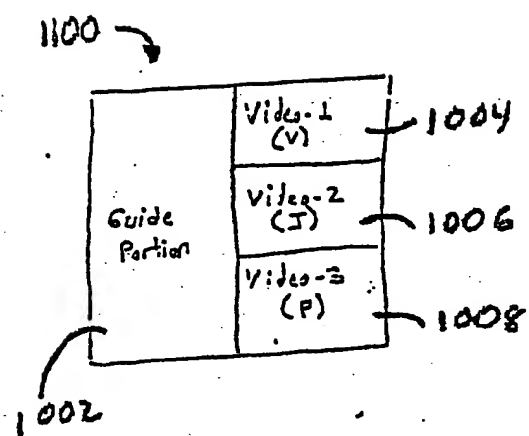


FIGURE 11A

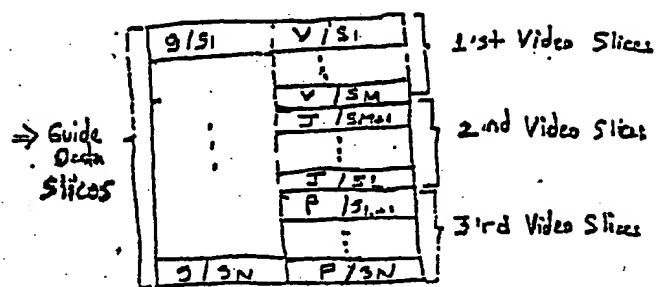


Figure 11B

2025 RELEASE UNDER E.O. 14176

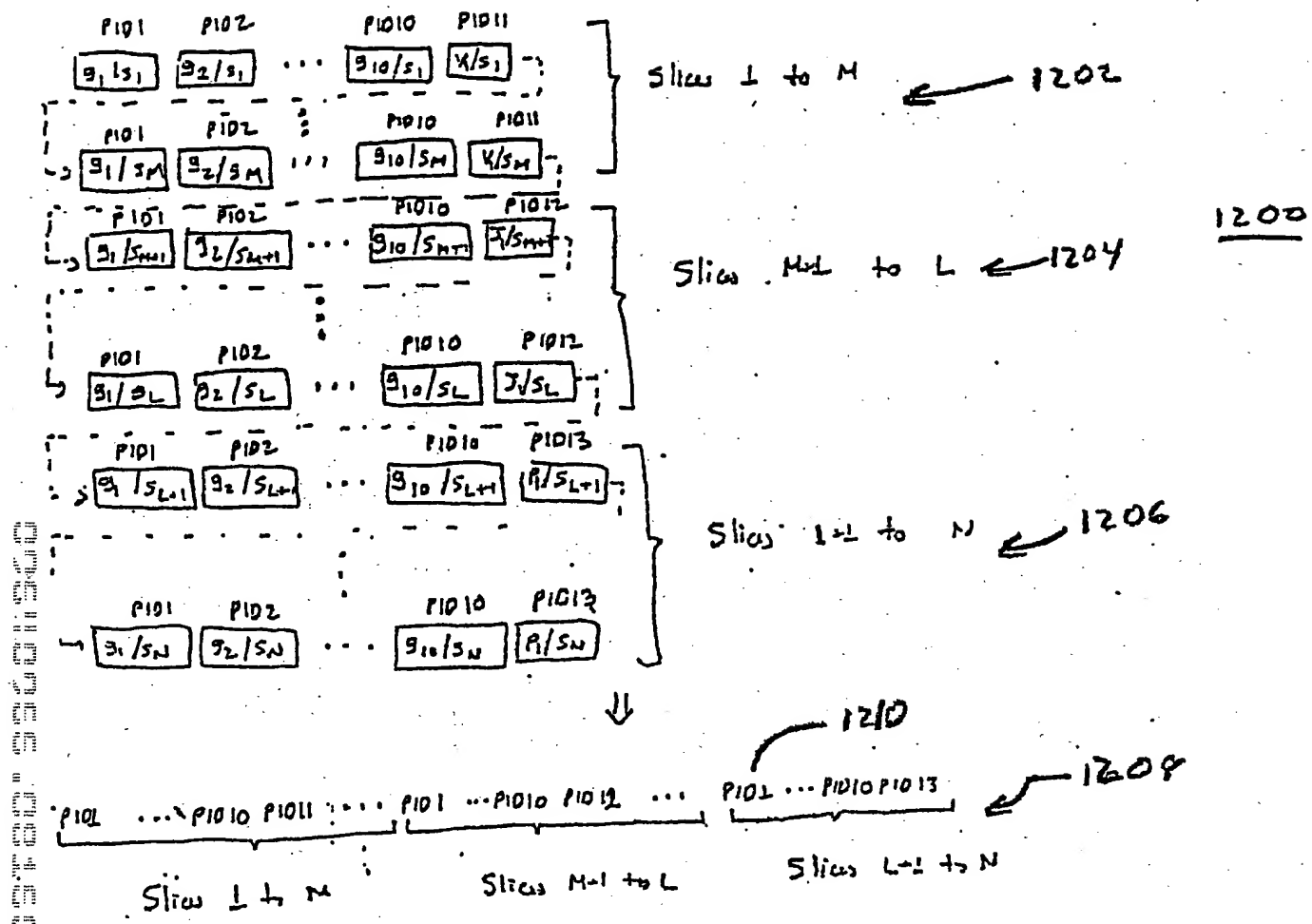


Figure 12

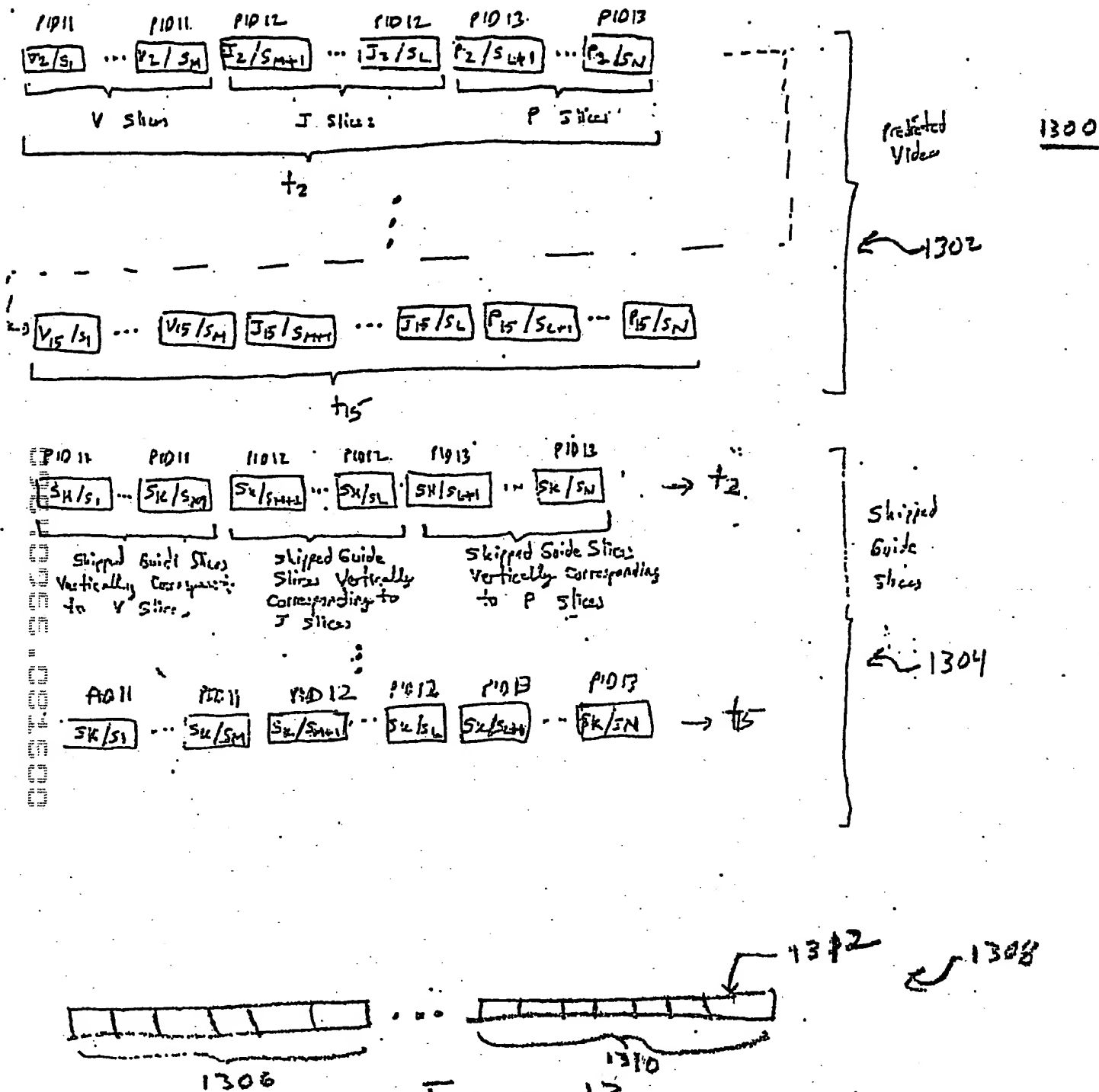


Figure 13

The diagram illustrates a video system 224. It begins with a 'FROM FORWARD CHANNEL' input to a 'TUNER' 1470. The tuner outputs an 'IF' signal to a 'DEMODULATOR' 1420, which also receives a 'TUNE' signal from the 'CONTROLLER' 1470. The demodulator outputs a 'TD' signal to a 'TRANSPORT DEMUX' 1430. The transport demux outputs an 'A' signal to an 'AUDIO DECODER' 1440, which then outputs an 'AD' signal to a 'TO AUDIO PROCESSOR' block. It also outputs a 'V' signal to a 'VIDEO DECODER' 1450, which outputs a 'VD' signal to a 'COMPOSITOR' 1490. The transport demux also outputs 'DATA' 1460 to an 'OSD' block, which outputs an 'OSD' signal to the 'COMPOSITOR' and an 'F' signal to a 'FRAME STORE' 1462. The 'COMPOSITOR' outputs a 'VOSD' signal to the 'FRAME STORE'. The 'FRAME STORE' outputs a signal to a 'TO VIDEO PROCESSOR' block. A 'MODULATOR' 1495 receives a signal from the 'DEMODULATOR' and outputs a 'TO BACK CHANNEL' signal. The 'CONTROLLER' 1470 is a central unit containing an 'I/R' 1475, a 'P' 1472, 'SUPPORT CIRCUITS' 1478, 'MEMORY' 1476, a 'USER INTERACTION ROUTINE' 1400, a 'PMT' 1477, 'OVERLAY STORAGE' 1479, and a 'STREAM PROCESSING ROUTINE' 1402. An '8 POSITION JOYSTICK NUMBER PAD SELECT KEY FREEZE KEY RETURN KEY' 1480 is connected to the 'I/R' 1475. A separate block at the top shows 'BS1', 'BS2', and 'BSN' signals passing through a switch 'M'.

Figure 14

```

graph TD
    START([START]) --> 1510[WAIT FOR DESIRED I-STREAM PIDS]
    1510 --> 1515[EXTRACT PACKETS OF DESIRED I-STREAM PIDS]
    1515 --> 1520[COUPLE PAYLOAD'S OF DESIRED I-STREAM PACKETS TO VIDEO DECODER]
    1520 --> 1525[EXTRACT PACKETS OF PREDICTED PICTURE STREAM PIDS]
    1525 --> 1530[COUPLE PAYLOAD'S OF PREDICTED PICTURE STREAMS' PACKETS TO VIDEO DECODER]
    1530 --> 1535{SELECT IF DIFFERENT I-STREAM PIDS?}
    1535 -- NO --> 1540[IDENTIFY PIDS OF NEW DESIRED I-SLICES]
    1535 -- YES --> 1540
    1540 --> 1500[ ]

```

Figure 15

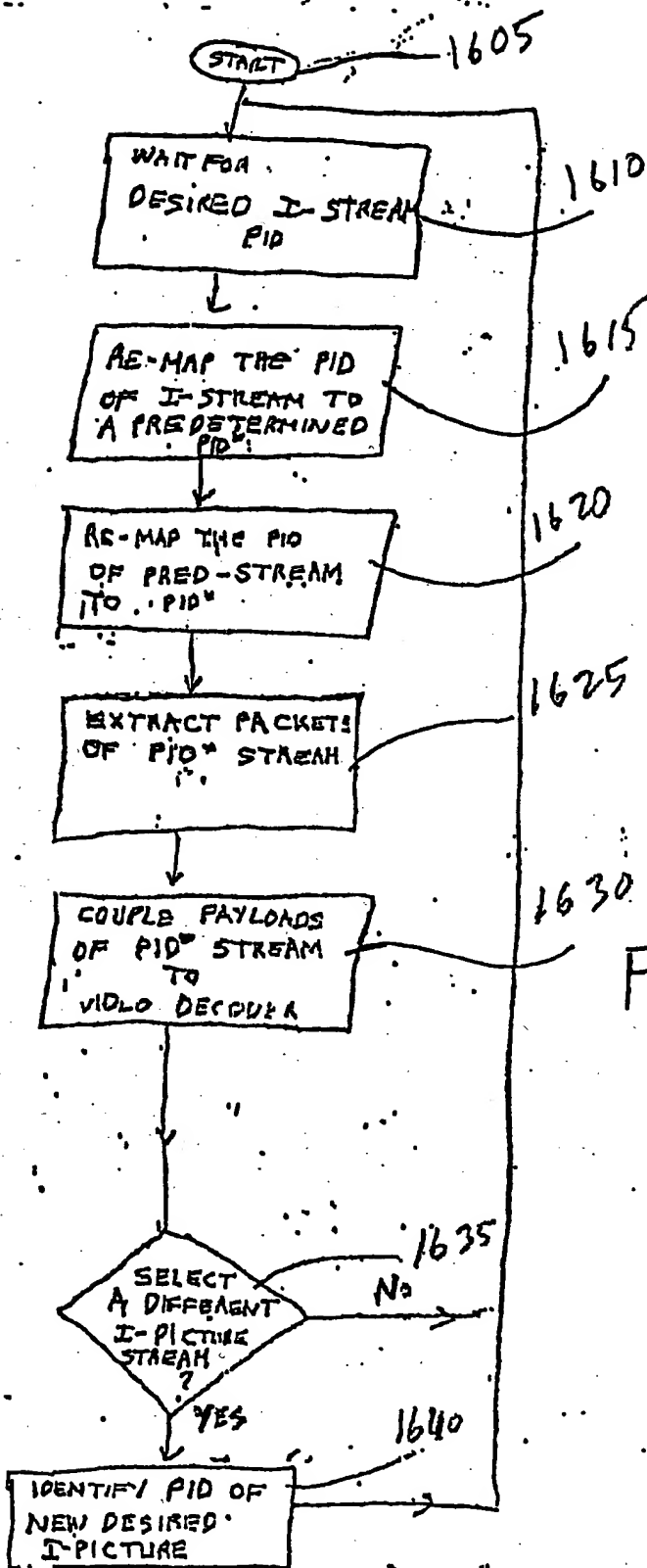
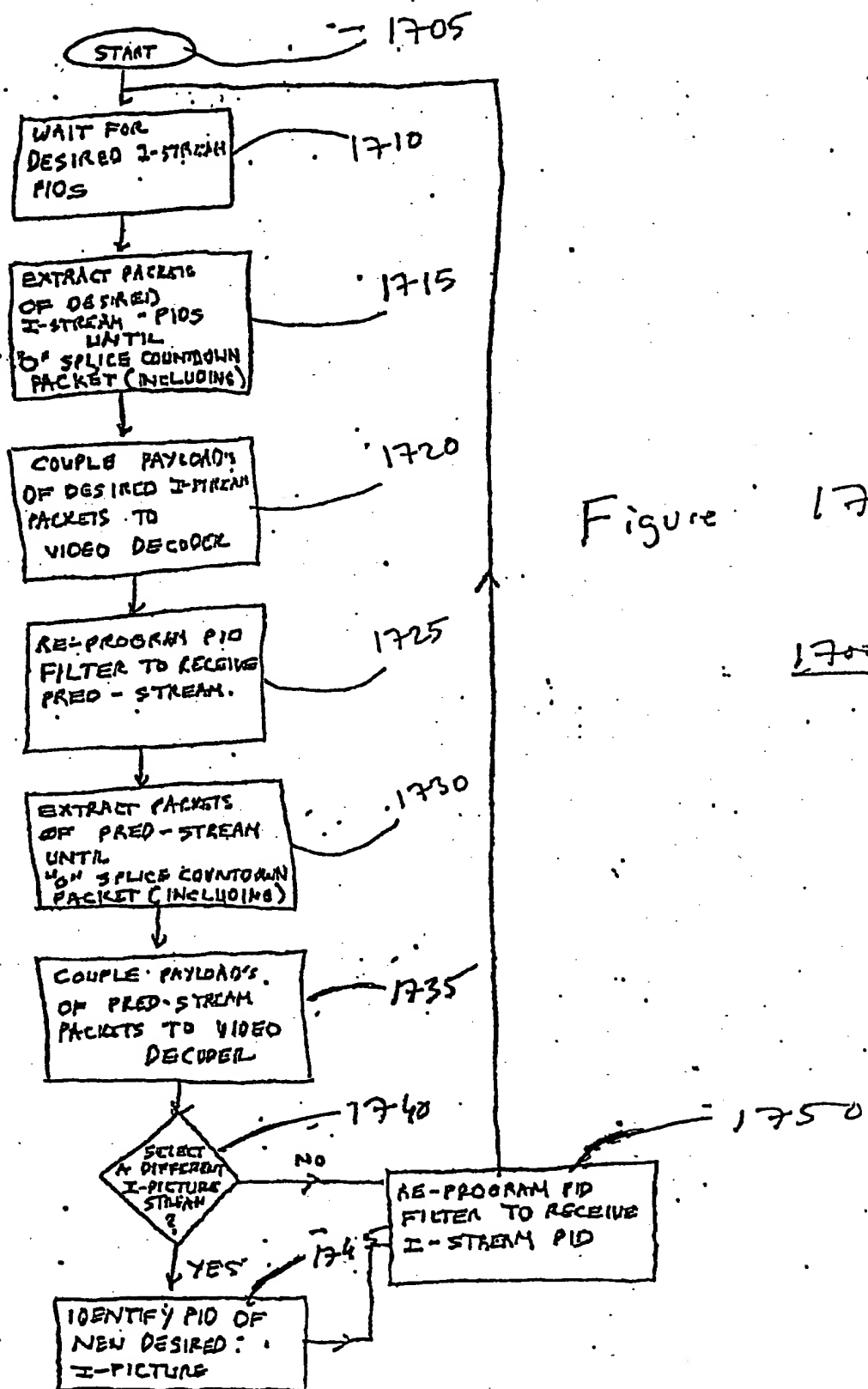


Figure 16



1800

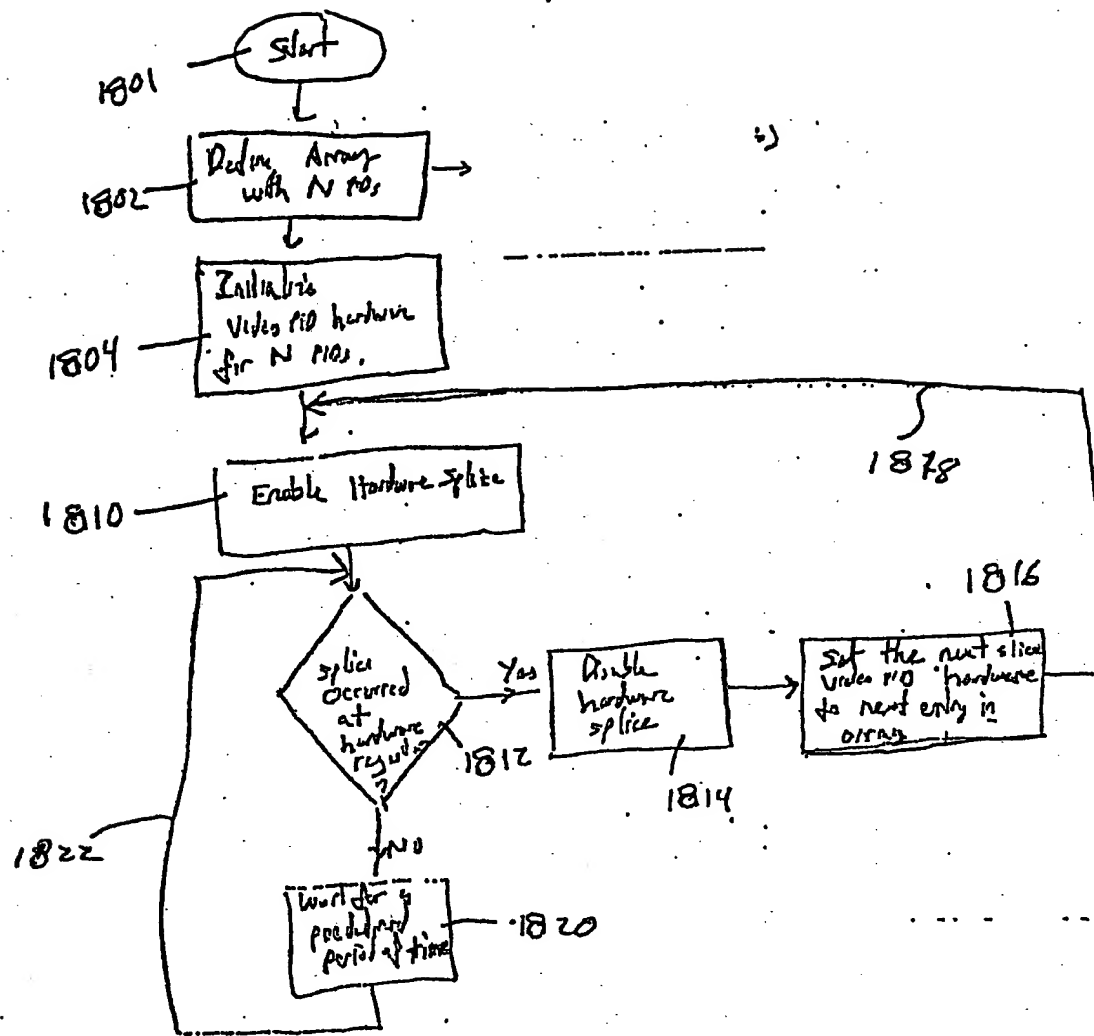


Figure 18

time = t_1

00000000000000000000

<u>PID1</u>	<u>PID2</u>	<u>PID3</u>	...	<u>PID9</u>	<u>PID10</u>	<u>PID11</u>	<u>PID12</u>	<u>PID13</u>
$g1/s1$	$g2/s1$	$g3/s1$	...	$g9/s1$	$g10/s1$	$v1/s1$	$m1/s1$	$k1/s1$
$\hookrightarrow g1/s2$	$g2/s2$	$g3/s2$	...	$g9/s2$	$g10/s2$	$v1/s2$	$m1/s2$	$k1/s2$
$\hookrightarrow g1/s3$	$g2/s3$	$g3/s3$	...	$g9/s3$	$g10/s3$	$v1/s3$	$m1/s3$	$k1/s3$
...
$\hookrightarrow g1/sN$	$g2/sN$	$g3/sN$	...	$g9/sN$	$g10/sN$	$v1/sN$	$m1/sN$	$k1/sN$

1900

Intra-coded Guide and Video

Fig. 19

<u>m2</u>	<u>PID 11</u>	<u>PID 12</u>	<u>PID 13</u>	<u>PID 14</u>	<u>PID 15</u>	<u>PID 16</u>	<u>PID 17</u>	<u>PID 18</u>	<u>PID 19</u>	<u>PID 20</u>	<u>PID 21</u>	<u>PID 22</u>	<u>PID 23</u>	<u>PID 24</u>
x2	V2/S1	M2/S1	K2/S1	V2/S2	M2/S2	K2/S2	V2/SN	M2/SN	K2/SN	V2/SN	M2/SN	K2/SN	V2/SN	M2/SN
x3	V3/S1	M3/S1	K3/S1	V3/S2	M3/S2	K3/S2	V3/SN	M3/SN	K3/SN	V3/SN	M3/SN	K3/SN	V3/SN	M3/SN
x4	V4/S1	M4/S1	K4/S1	V4/S2	M4/S2	K4/S2	V4/SN	M4/SN	K4/SN	V4/SN	M4/SN	K4/SN	V4/SN	M4/SN
x5	V5/S1	M5/S1	K5/S1	V5/S2	M5/S2	K5/S2	V5/SN	M5/SN	K5/SN	V5/SN	M5/SN	K5/SN	V5/SN	M5/SN

Predicted Video 2000

Fig. 20

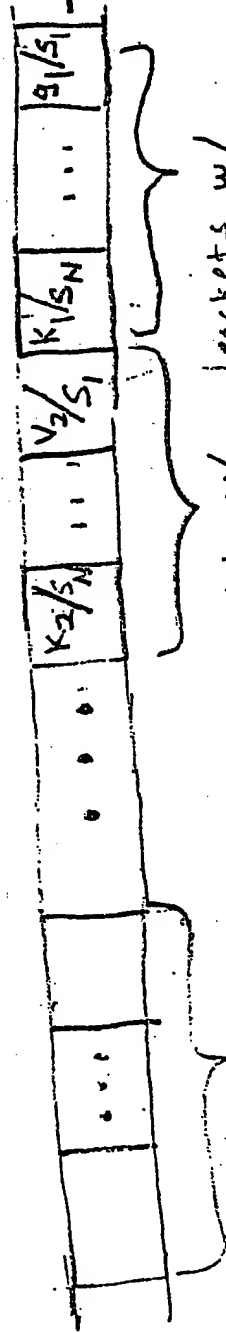
<u>time</u>	<u>PID11</u>	<u>PID12</u>	<u>PID13</u>	<u>PID11</u>	<u>PID12</u>	<u>PID13</u>	<u>PID11</u>	<u>PID12</u>	<u>PID13</u>
t_2	SK/S1	SK/S1	SK/S1	SK/S2	SK/S2	SK/S2	SK/SN	SK/SN	SK/SN
t_3	SK/S1	SK/S1	SK/S1	SK/S2	SK/S2	SK/S2	SK/SN	SK/SN	SK/SN
t_4	SK/S1	SK/S1	SK/S1	SK/S2	SK/S2	SK/S2	SK/SN	SK/SN	SK/SN
\vdots	\vdots	\vdots	\vdots	\vdots	\vdots	\vdots	\vdots	\vdots	\vdots
t_{15}	SK/S1	SK/S1	SK/S1	SK/S1	SK/S2	SK/S2	SK/S2	SK/SN	SK/SN

SKIPPED GUIDE 2100

Fig. 21

Video and Graphics

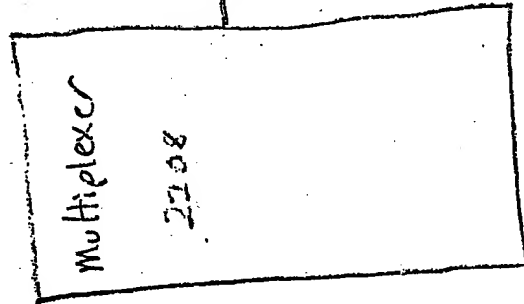
2214



packets w/
PID 11 to PID 13
for predictive
video and skipped
guide at K_2 at time t_1

packets w/
PID 11 to PID 13
for predictive
video and skipped
guide at t_{15}
2115 2015

2102 2002 1900



1st Packetized Audio Stream

2202

2nd Packetized Audio Stream

2204

3rd Packetized Audio Stream

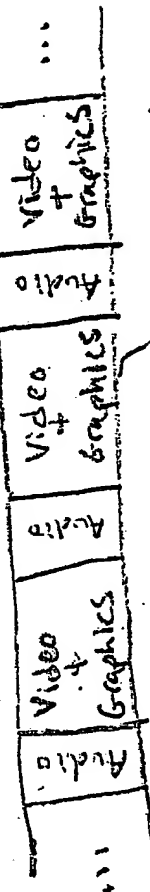
2206

Remux
2212

Audio Packet
Stream

2210

2216



Transport
Stream

Fig. 22

01	02	03
04	05	06
07	08	09

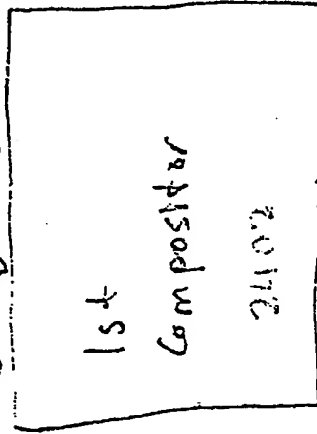
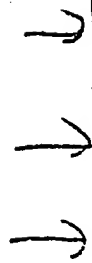
③

$0_1/s_1$	$0_2/s_1$	$0_3/s_1$
:	:	:
:	:	:
:	:	:
$0_1/s_1$	$0_2/s_1$	$0_3/s_1$
$0_4/s_{N+1}$	$0_5/s_{N+1}$	$0_6/s_{N+1}$
:	:	:
:	:	:
:	:	:
$0_4/s_N$	$0_5/s_N$	$0_6/s_N$
$0_7/s_{N+1}$	$0_8/s_{N+1}$	$0_9/s_{N+1}$
:	:	:
:	:	:
:	:	:
$0_7/s_N$	$0_8/s_N$	$0_9/s_N$

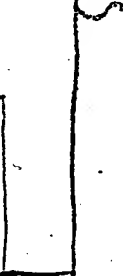
2

Fig. 23

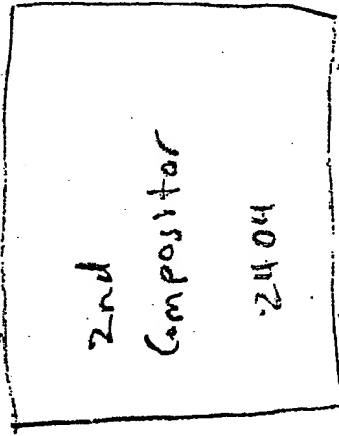
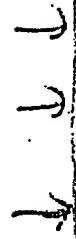
1st set of
3 video inputs



first
composite
video
signal
2403



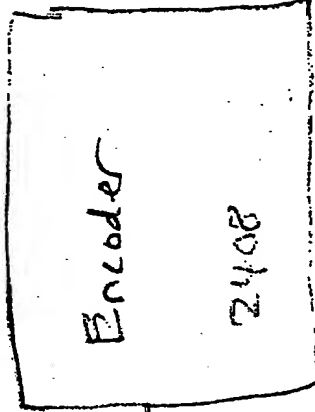
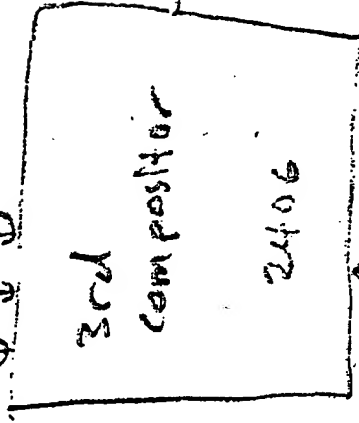
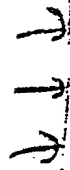
2nd set of
3 video inputs



second
composite
video
signal
2405



3rd set of
3 video inputs



video
object
stream
2409



compos
video
signal
2407



Cascade Compositor

Fig. 24

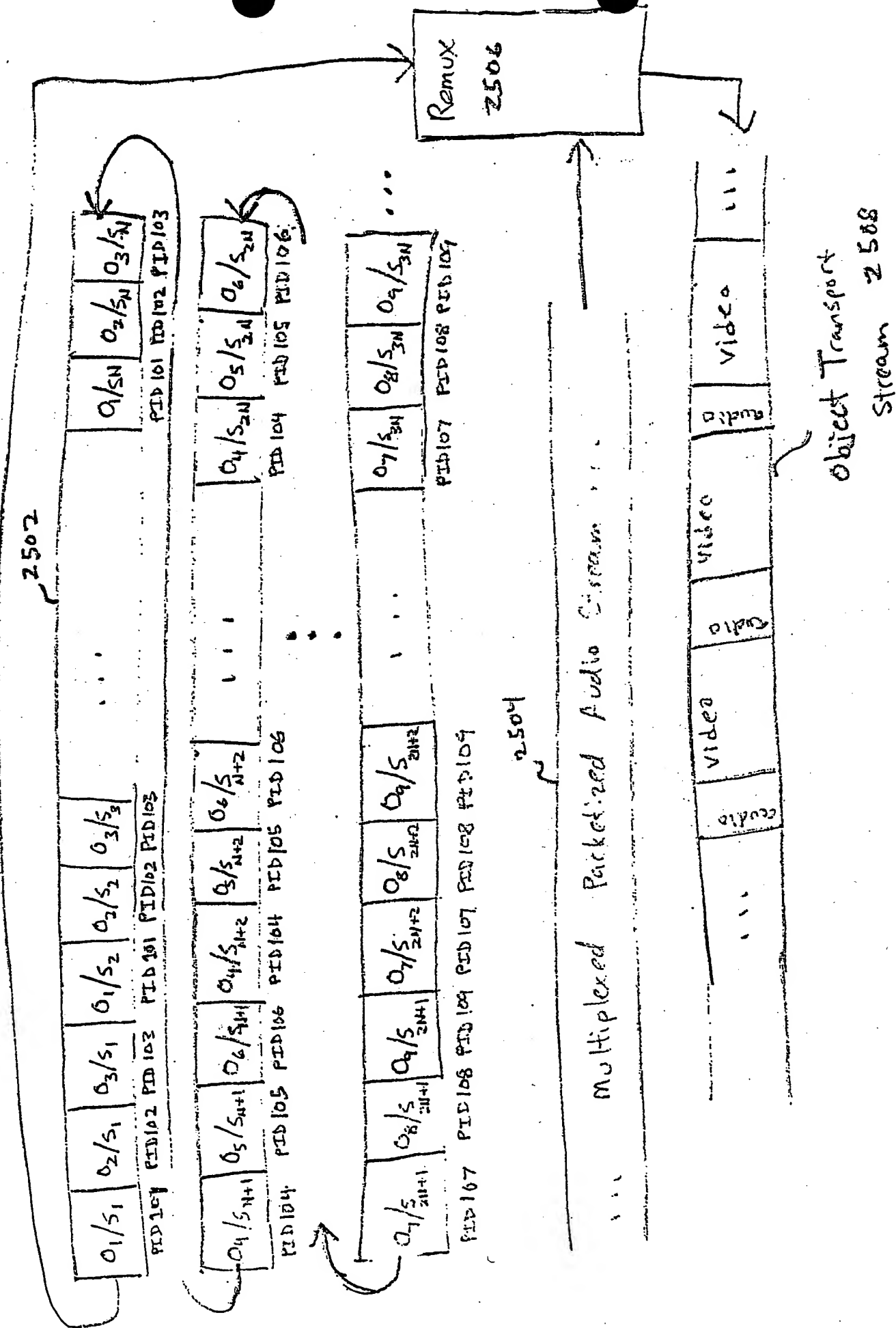


Fig. 25

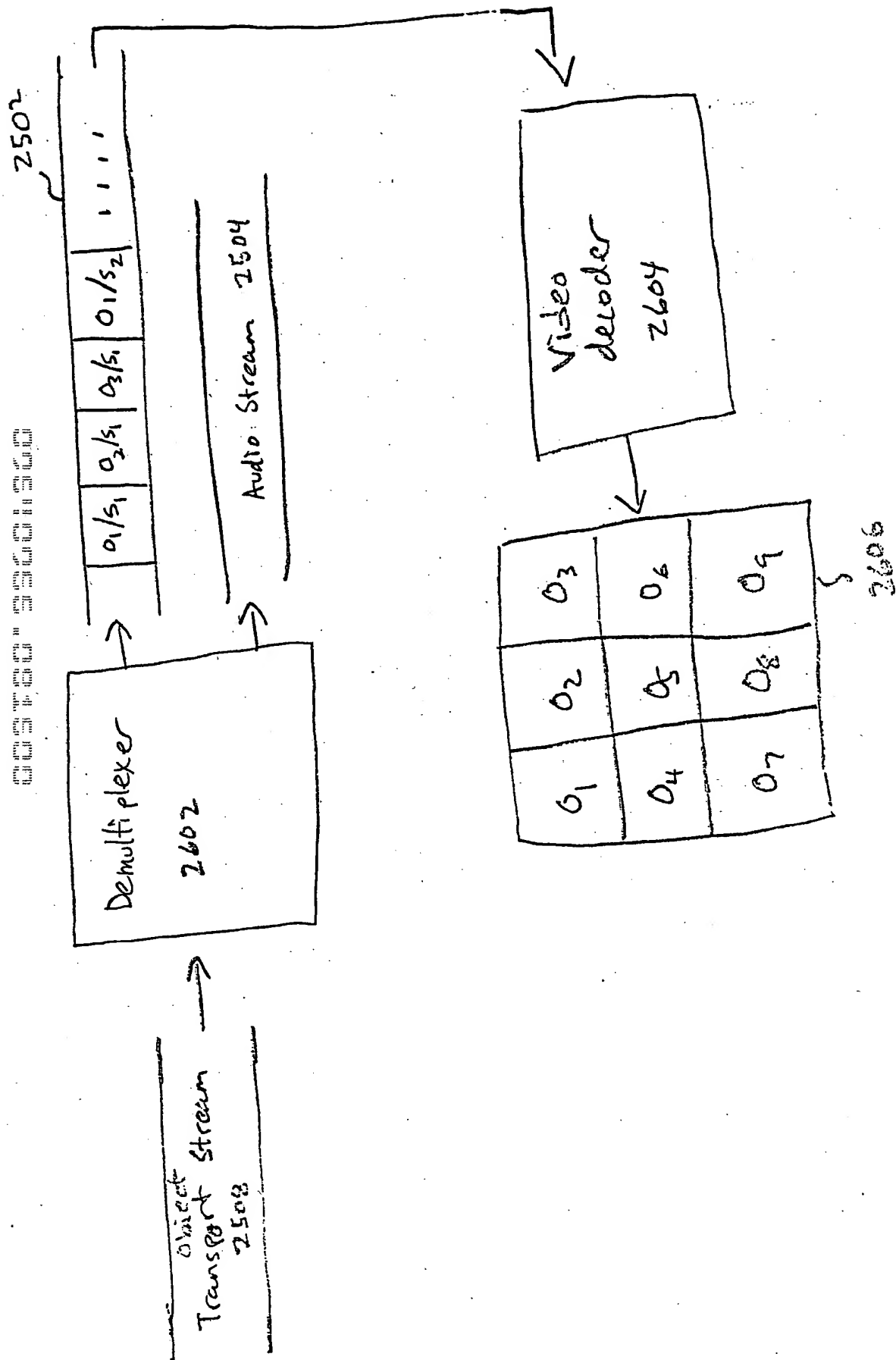


Fig. 26

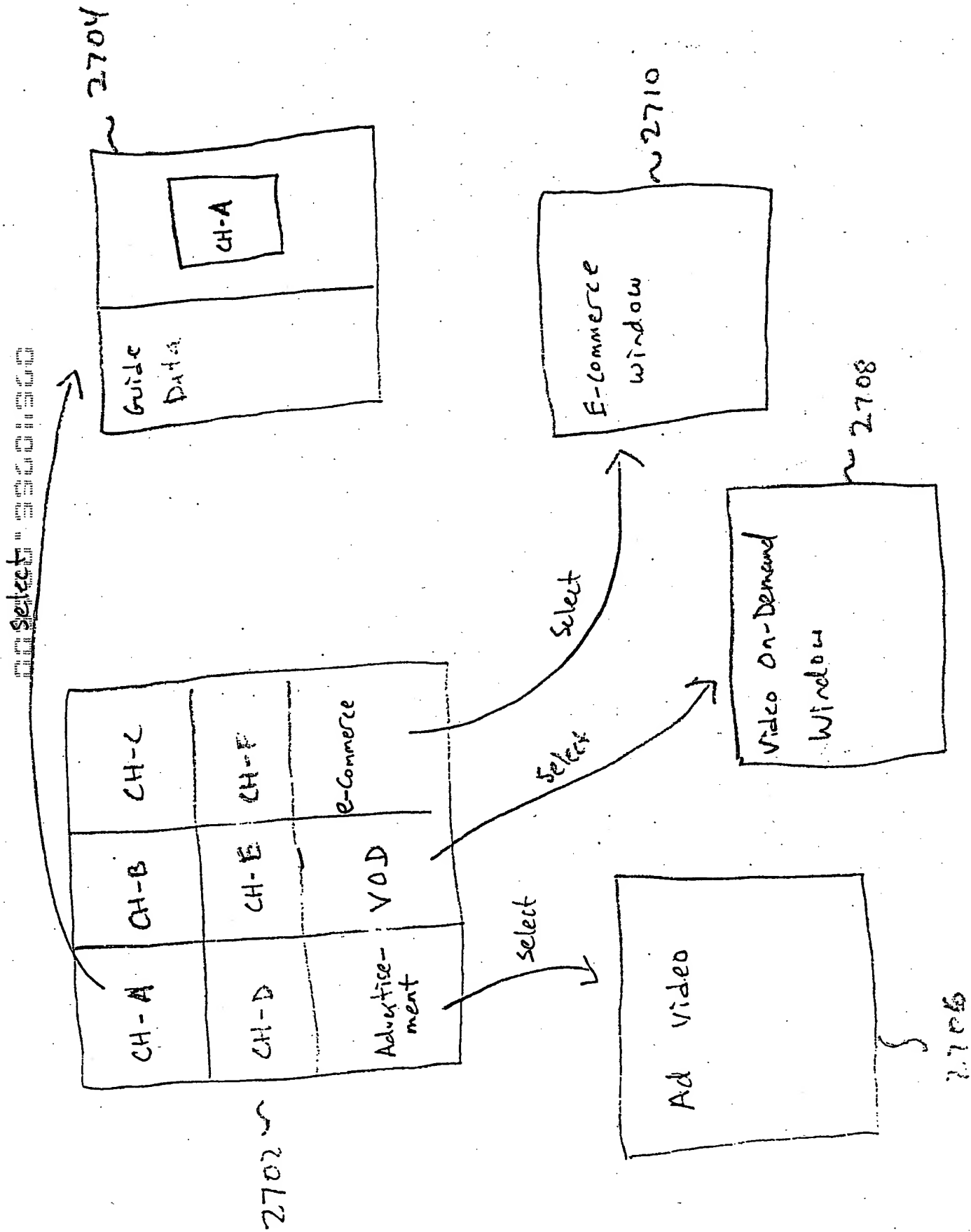


Fig. 27

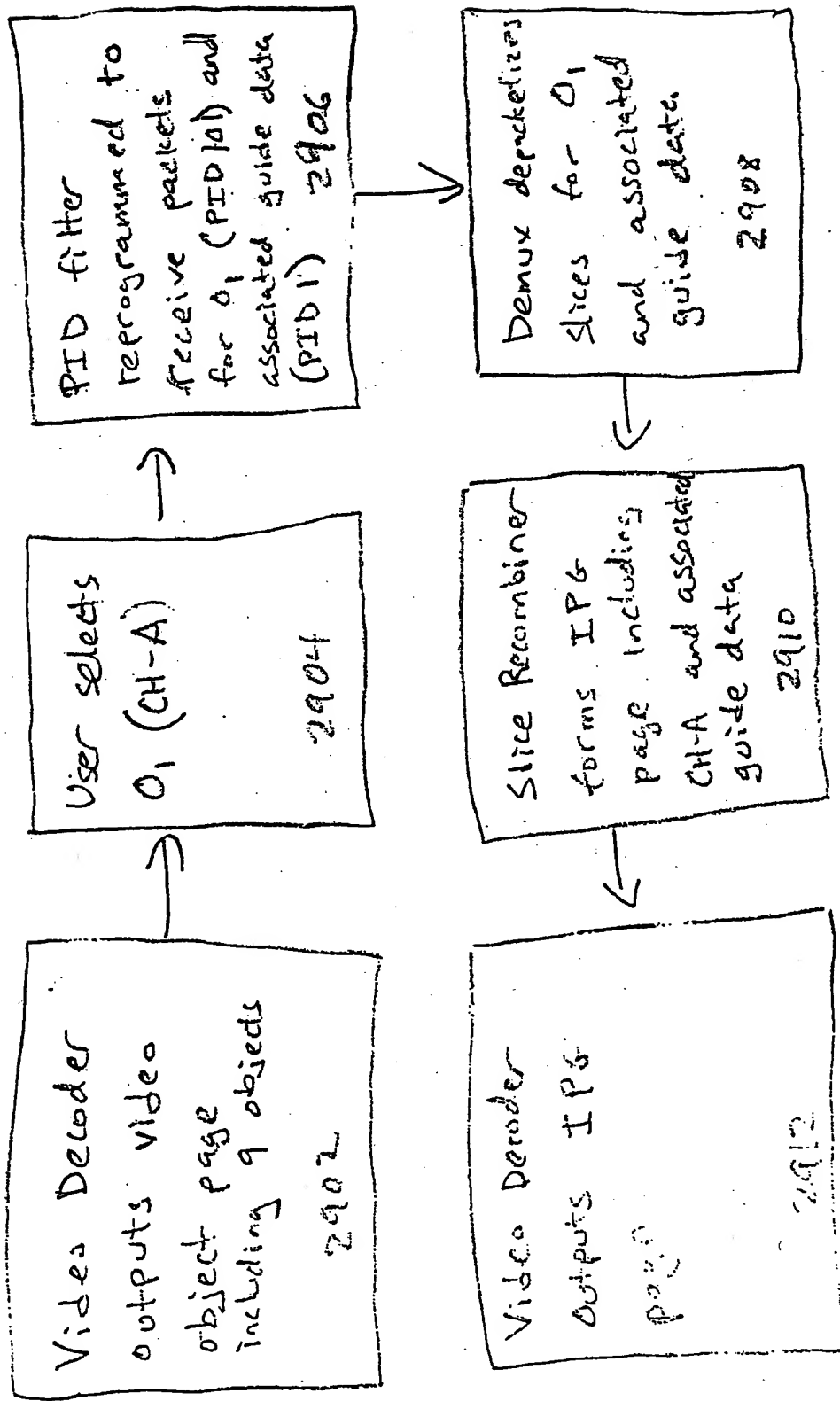
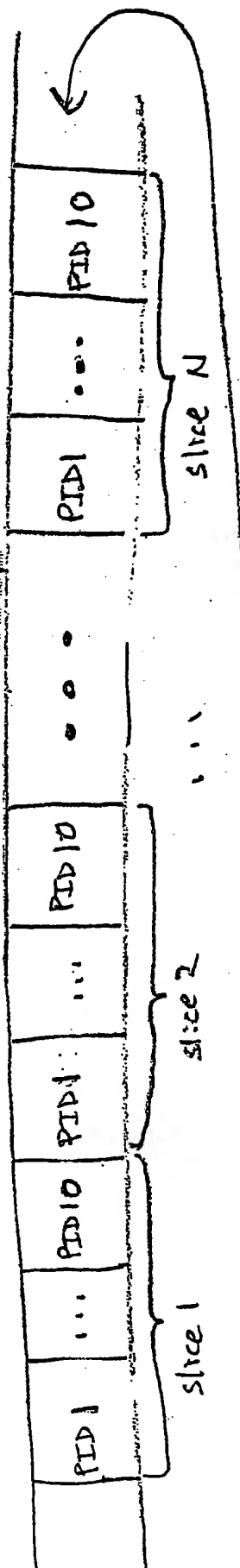
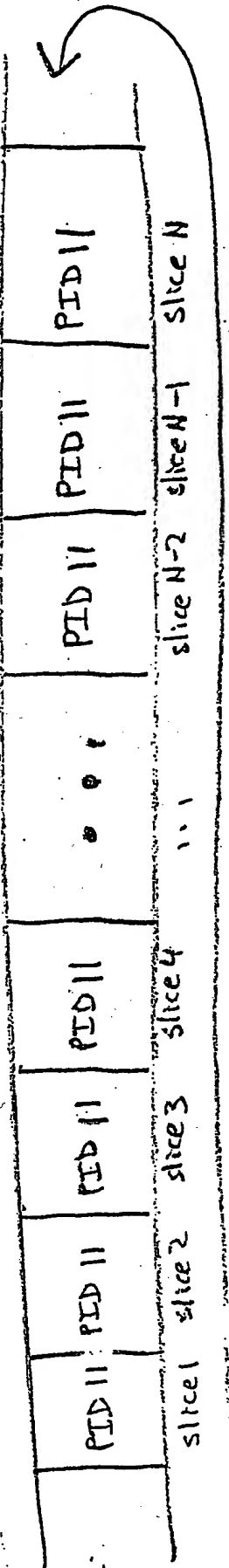


Fig. 29

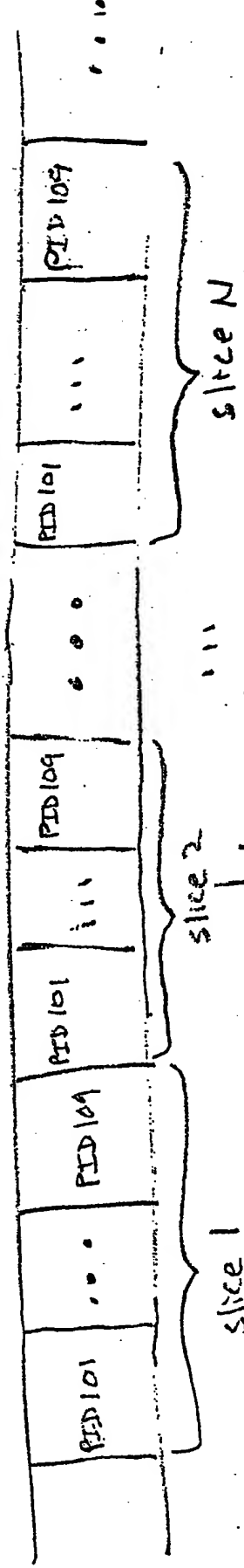
received packets



received packets



received packets



filtering 3010

received packets

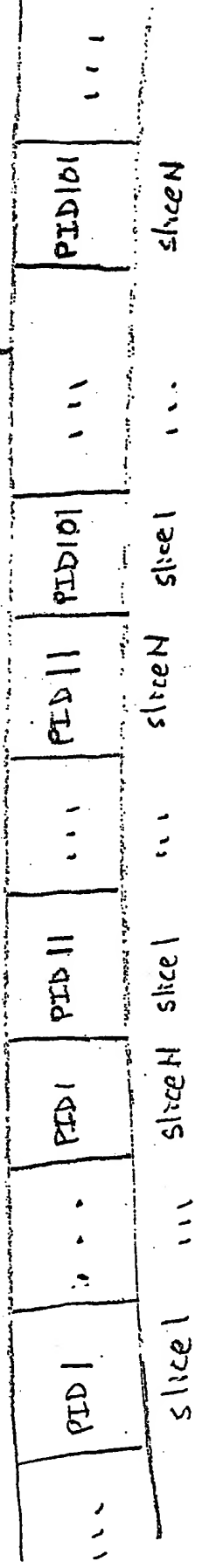
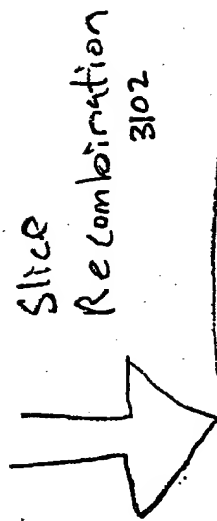


Fig. 30

received
system



PID11 / S1	PID101 / S1
PID11 / S2	PID101 / S2
PID11 / S3	PID101 / S3
PID11 SN	PID101 / SN

Intra-Coded Frame	Predictive - Coded Frames
3104	3106

Fig. 31

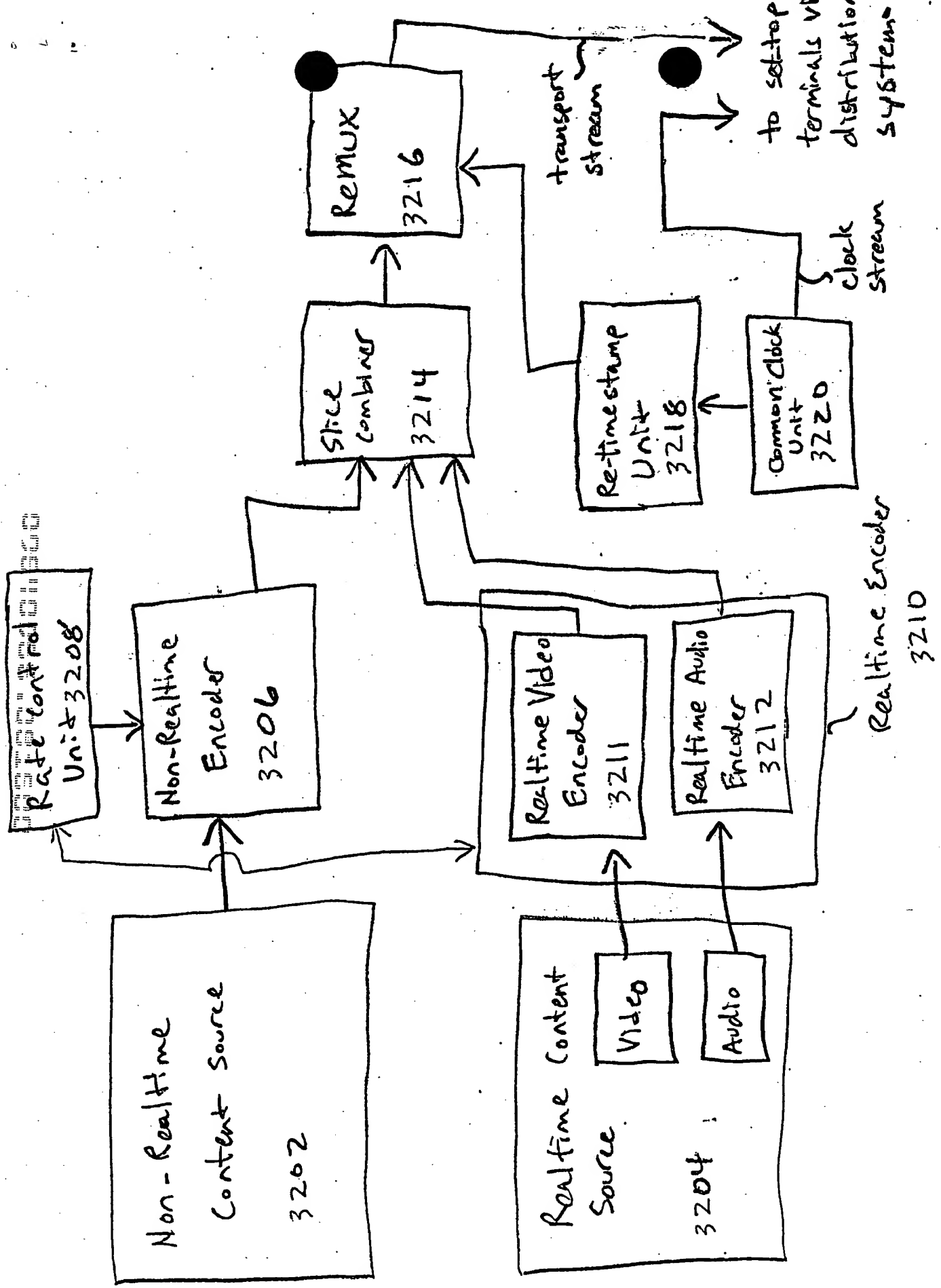


Fig. 32

Re-timestamping and Rate Control Apparatus

3304-0 3304-1 3304-2 3304-3 3304-4 3304-5 3304-6 3304-7

3304-0 ~		
3304-1 ~		
3304-2 ~		
3304-3 ~		
3304-4 ~		
3304-5 ~		
3304-6 ~		
3304-7 ~		

3301

3302

Fig. 33

3300

3304-0 3304-1 3304-2 3304-3 3304-4 3304-5 3304-6 3304-7

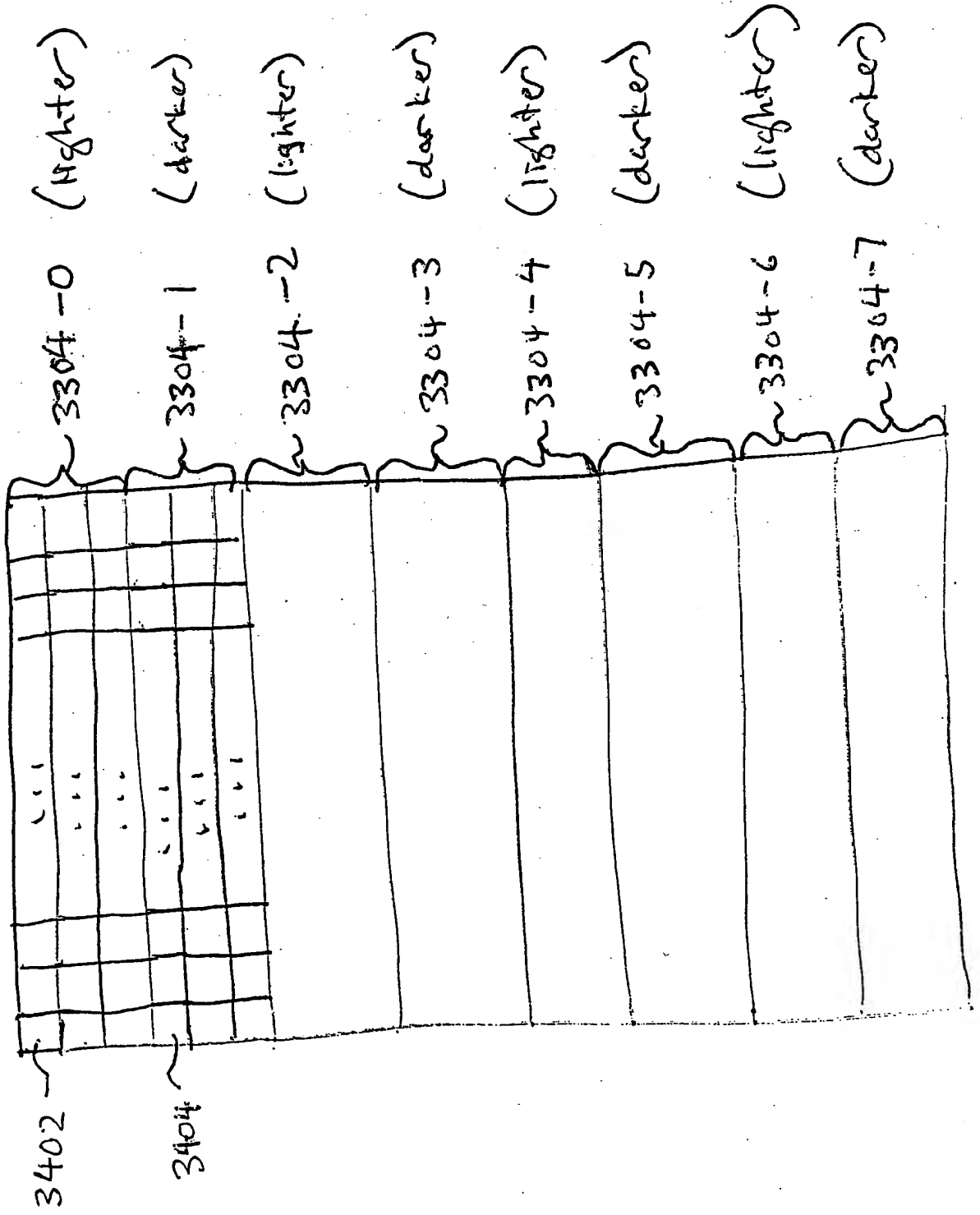


Fig. 34

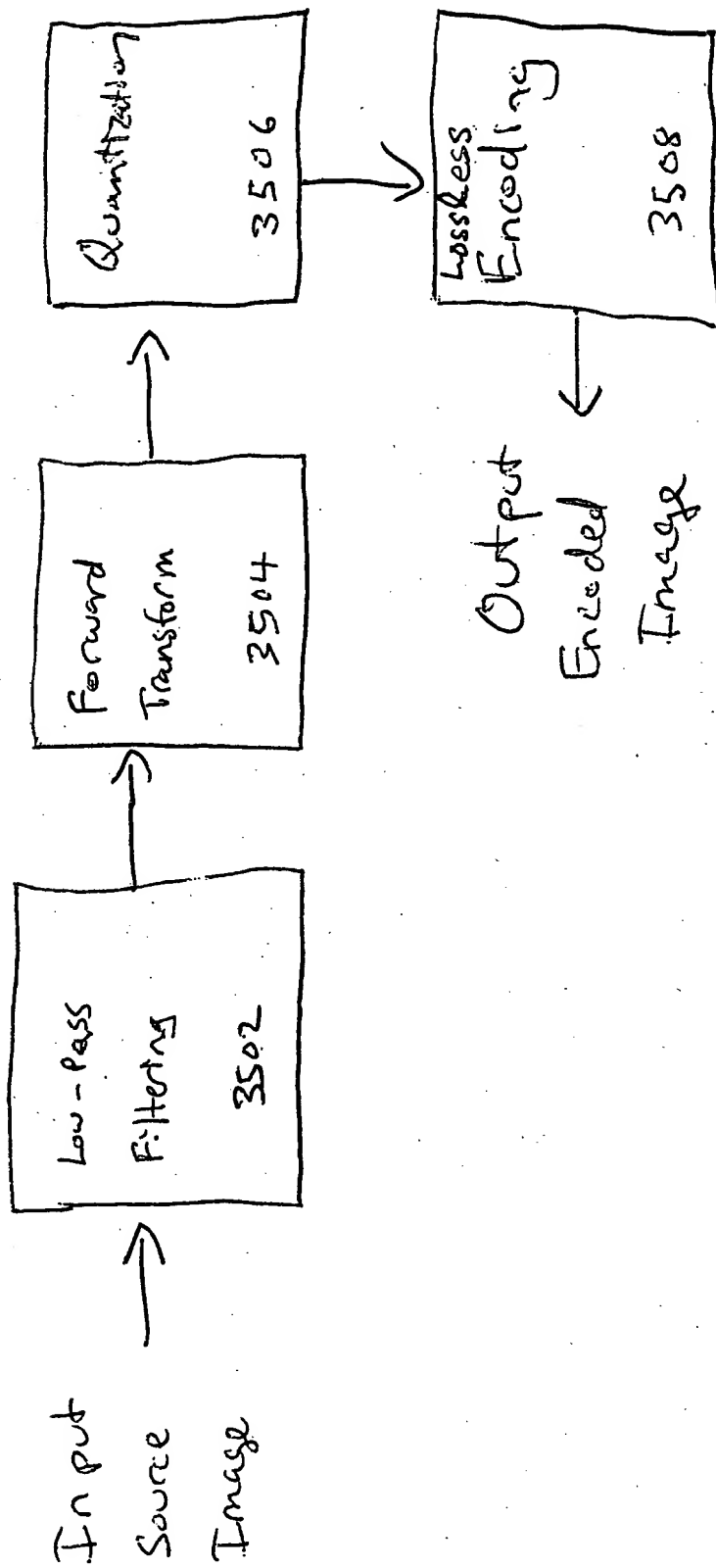


Fig. 35

3605

3600

3644

3643

3642

3641

3640

3640

3620

3615

9:00

9:30

Menu

>NHL HOCKEY>

HEMINGWAY>

TREMORS II:...

>MEET JOE BLACK>

BEHIND THE MUSIC>

SCARED STRAIGHT! '99>

FELICITY>

RIVERA LIVE>

WORLD WAR II IN COLOR>

DRAGNET

11 ESPN2

12 WHY

13 USA

14 STARZ

15 VH1

16 MTV

17 WPHL

18 CNBC

19 HIST

21 TVLND



Pay Per View Favorites

MOVIES

kids



SPORTS MUSIC OPTIONS Weather



Thurs 8:21pm

comcast.

Thurs, May 4 9:00 - 11:00 p.m. Sports/Live
Conference Semifinal, Game 5

3650

Fig. 36

3710

3712

3714

3716

3700

3718



Music



- ▶ 401 COUNTRY WESTERN
- 402 ROCK/POP
- 403 ADULT CONTEMPORARY
- 404 DANCE
- 405 LATIN RHYTHMS
- 406 PUNK WHITE MUSIC
- 407 ALTERNATIVE
- 408 CLOG HOPPING
- 409 THE BANJO CHANNEL
- 410 CLASSICAL
- 411 JAZZ
- 412 BIG BAND

- 413 DJEMBE MUSIC
- 414 CELTIC / IRISH
- 415 80'S SPANDEX METAL
- 416 MIDDLE-EASTERN
- 417 HITS OF THE 60'S
- 418 HITS OF THE 70'S
- 419 HITS OF THE 80'S
- 420 WIND CHIMES
- 421 SEATTLE ROCK
- 422 FREEDOM ROCK
- 423 ROLLER DISCO
- >>> MORE >>>

Title: "Truck Driving Fool With Lead Feet"
By: Shania Twain and Charles Manson
CD: 18 Gears of Love But Out Of Gas
On: Elektra ID# 236247

comcast.

372064
003001300

37206

3750

Fig. 37

3810

3800

1

38209

38206

3850

Music

Guide

▶ 401 COUNTRY WESTERN
402 ROCK/POP
403 ADULT CONTEMPORARY
404 DANCE
405 LATIN RHYTHMS
406 PUNK WHITE MUSIC
407 ALTERNATIVE
408 CLOG HOPPING
409 THE BANJO CHANNEL
410 CLASSICAL
411 JAZZ
412 BIG BAND

Title: "Truck Driving Fool With Lead Feet"
By: Shania Twain and Charles Manson
CD: 18 Gears of Love But Out Of Gas
On: Elektra ID# 236247

comcast



Fig. 38

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